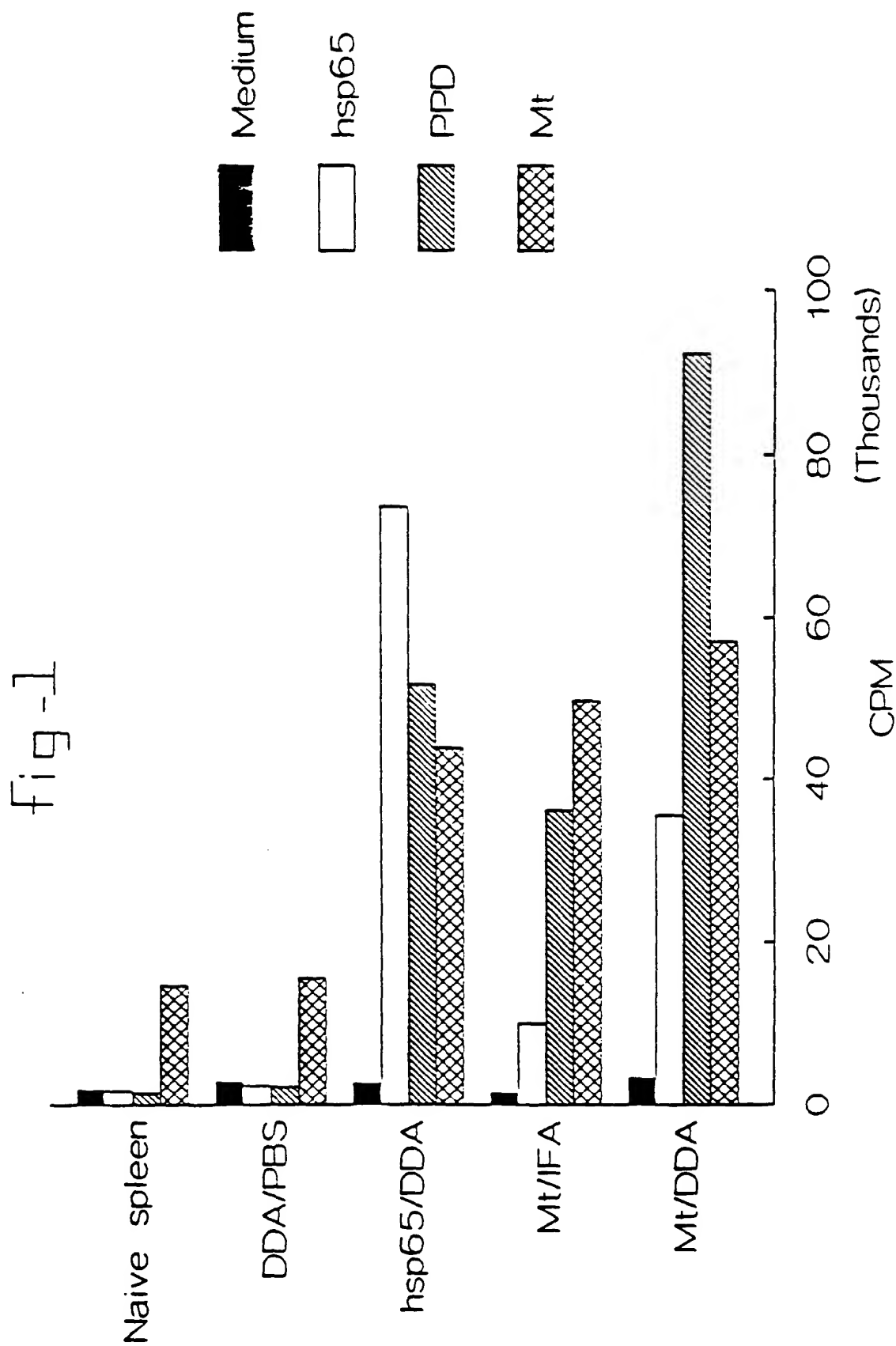


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fig-2

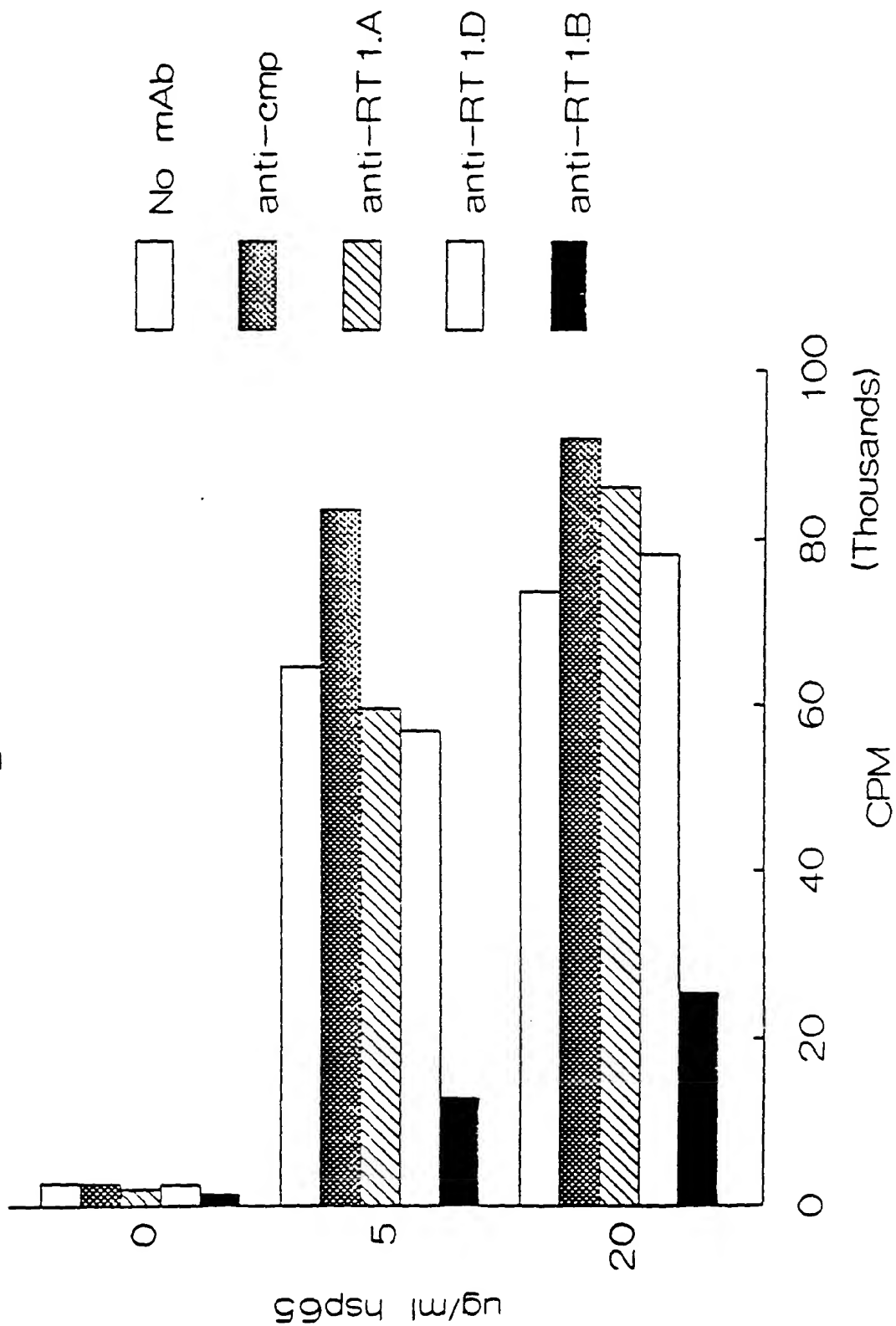
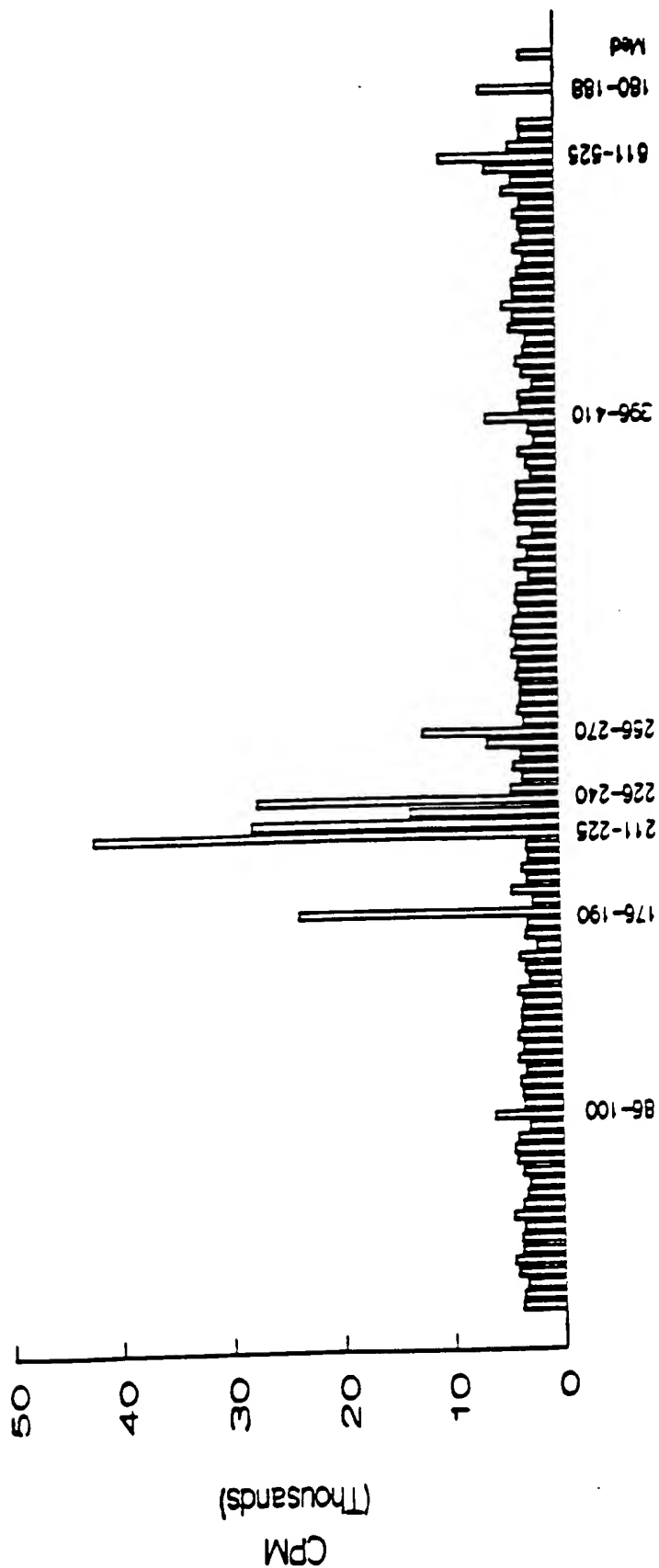
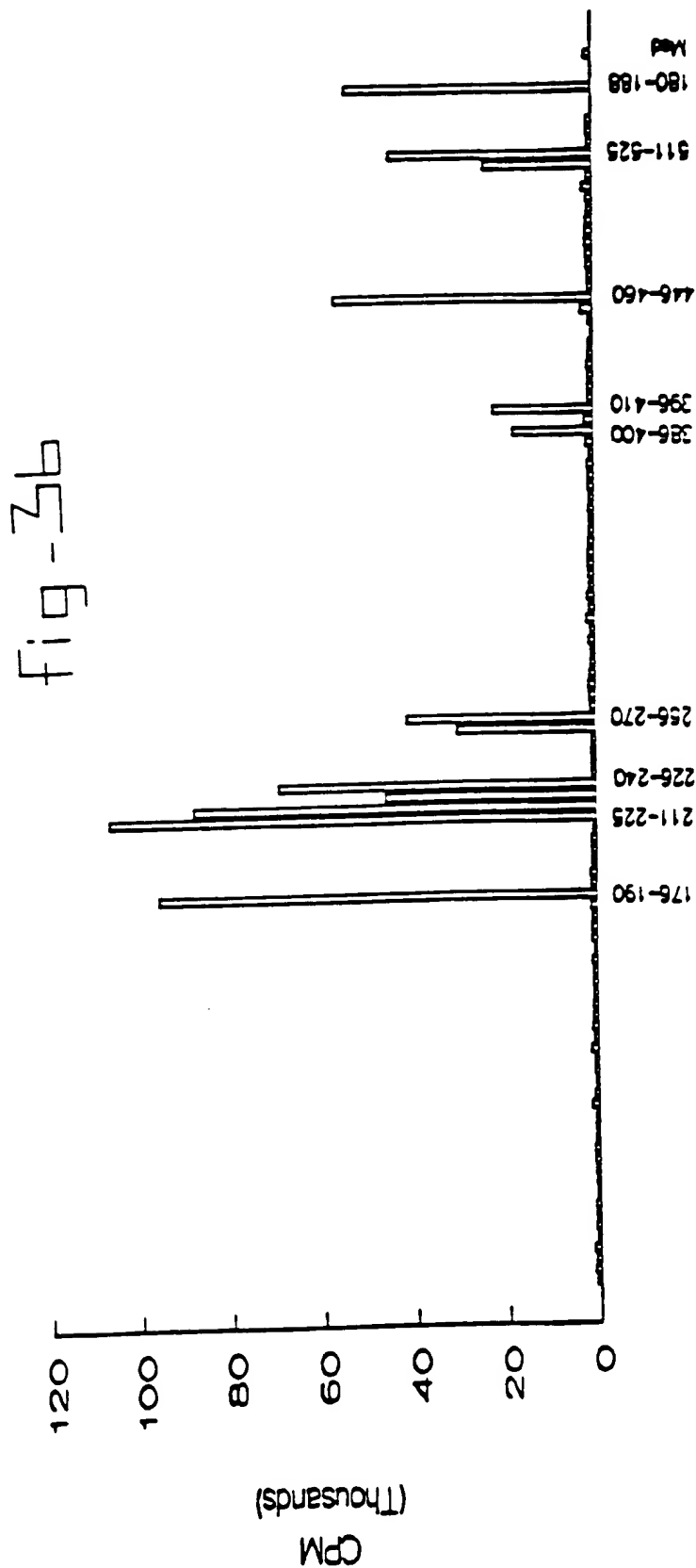


fig-3a





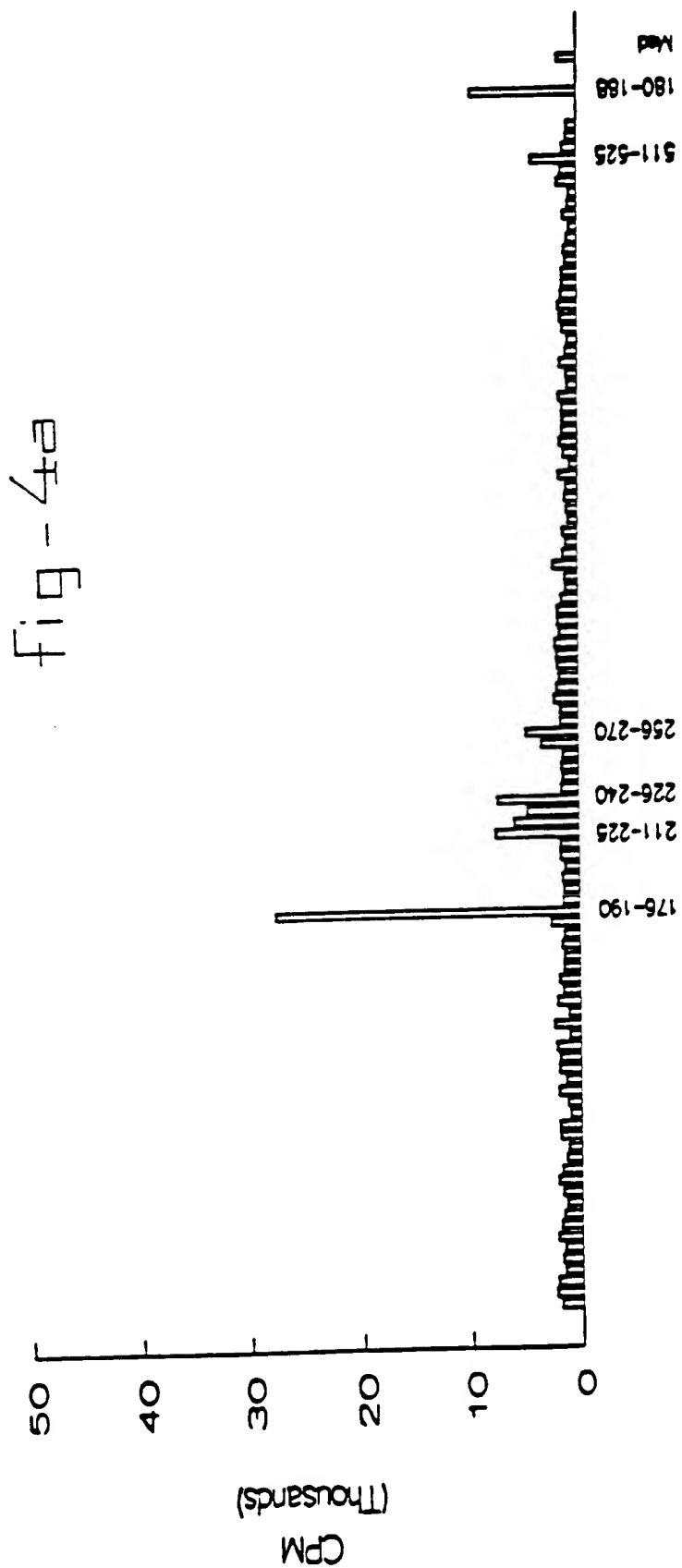


fig-4b

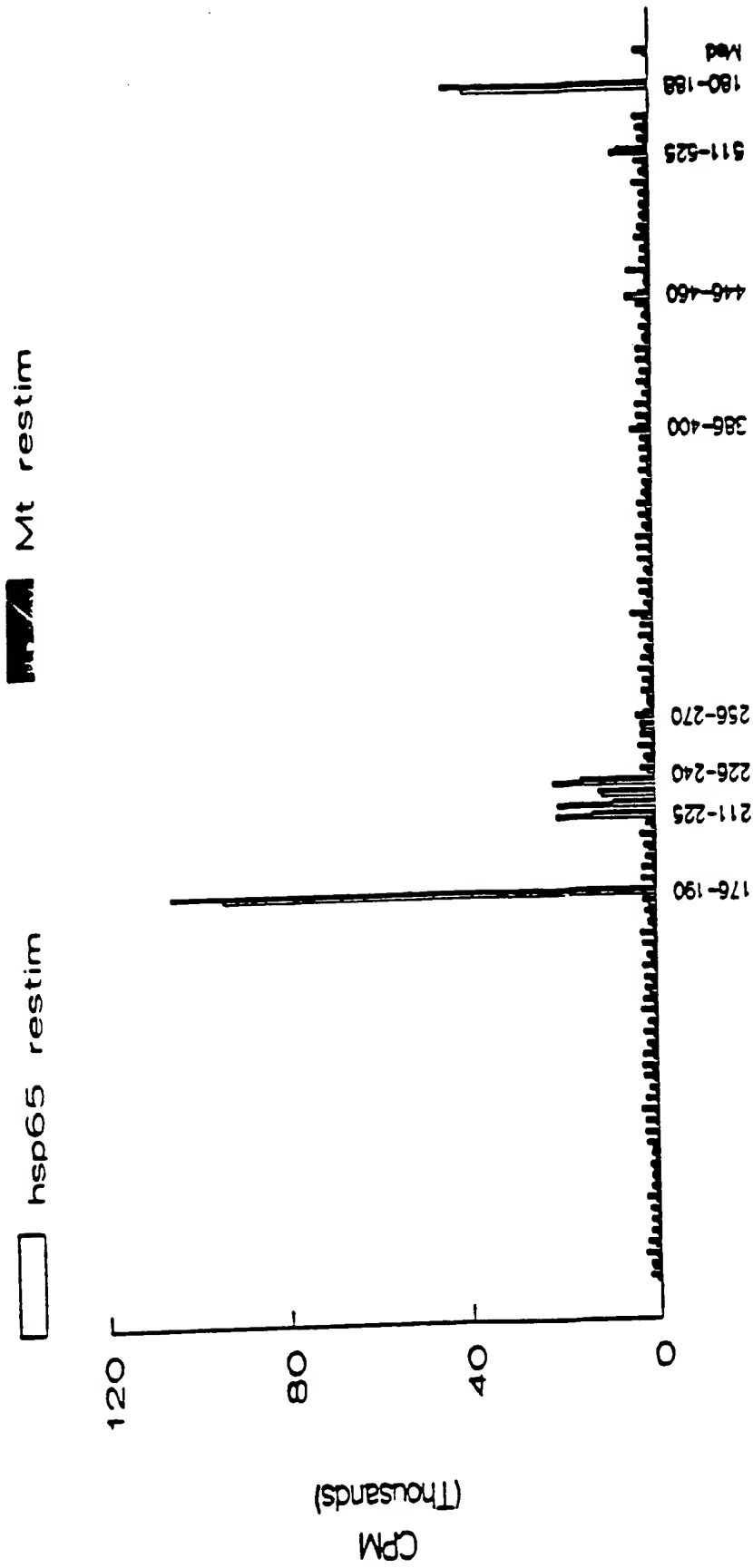
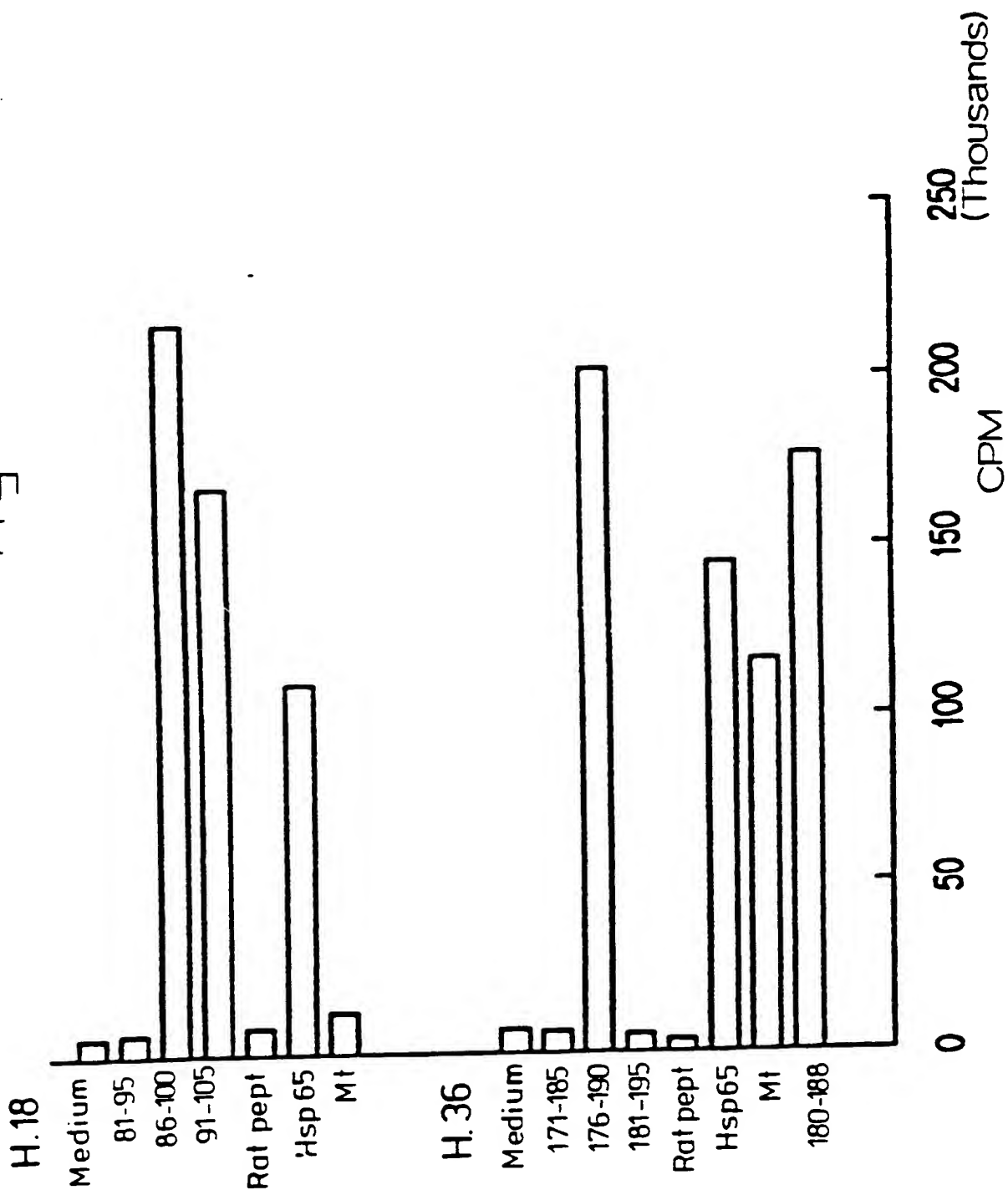


fig - 5.1



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fig - 5.2

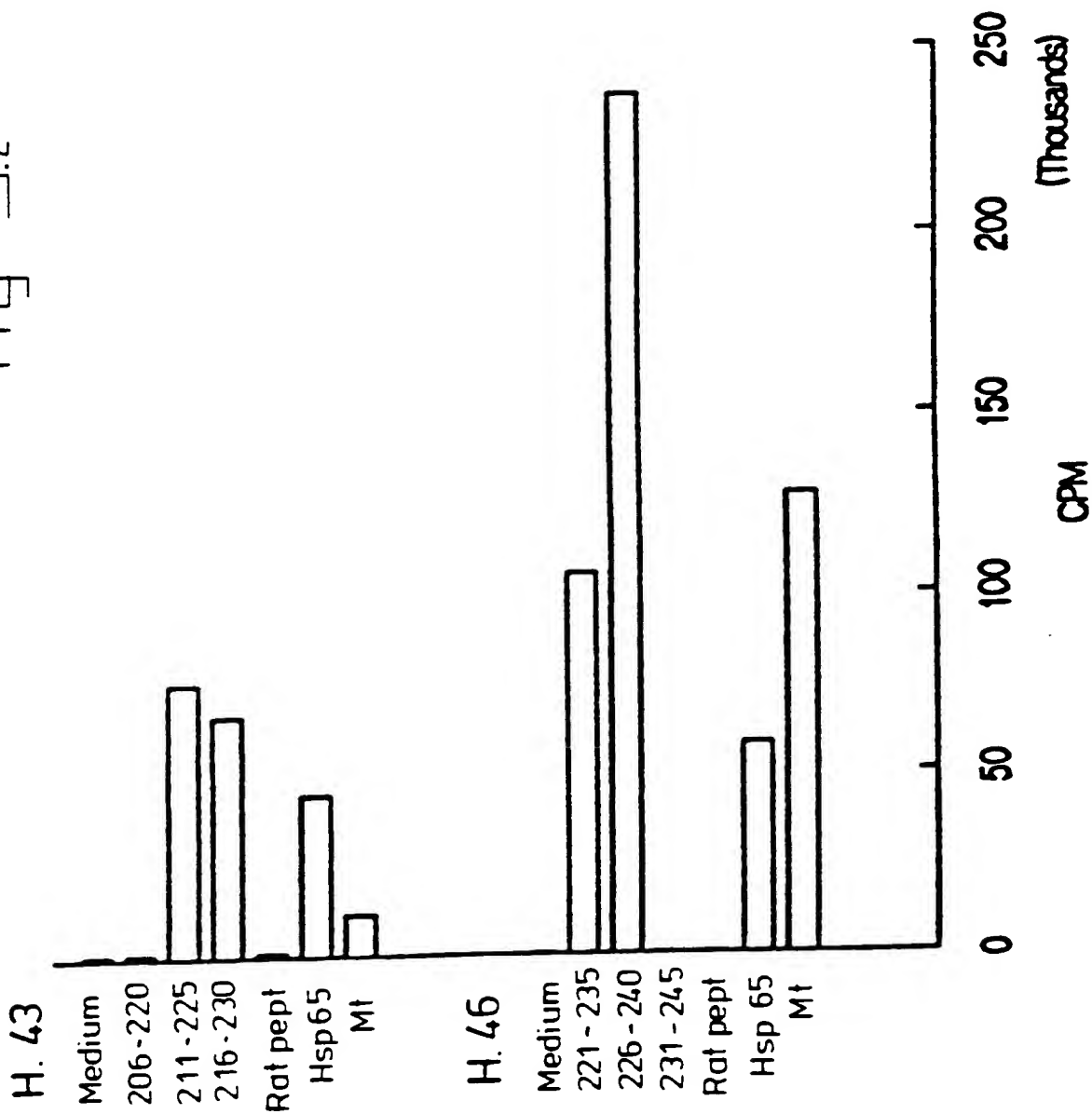


fig - 5.3

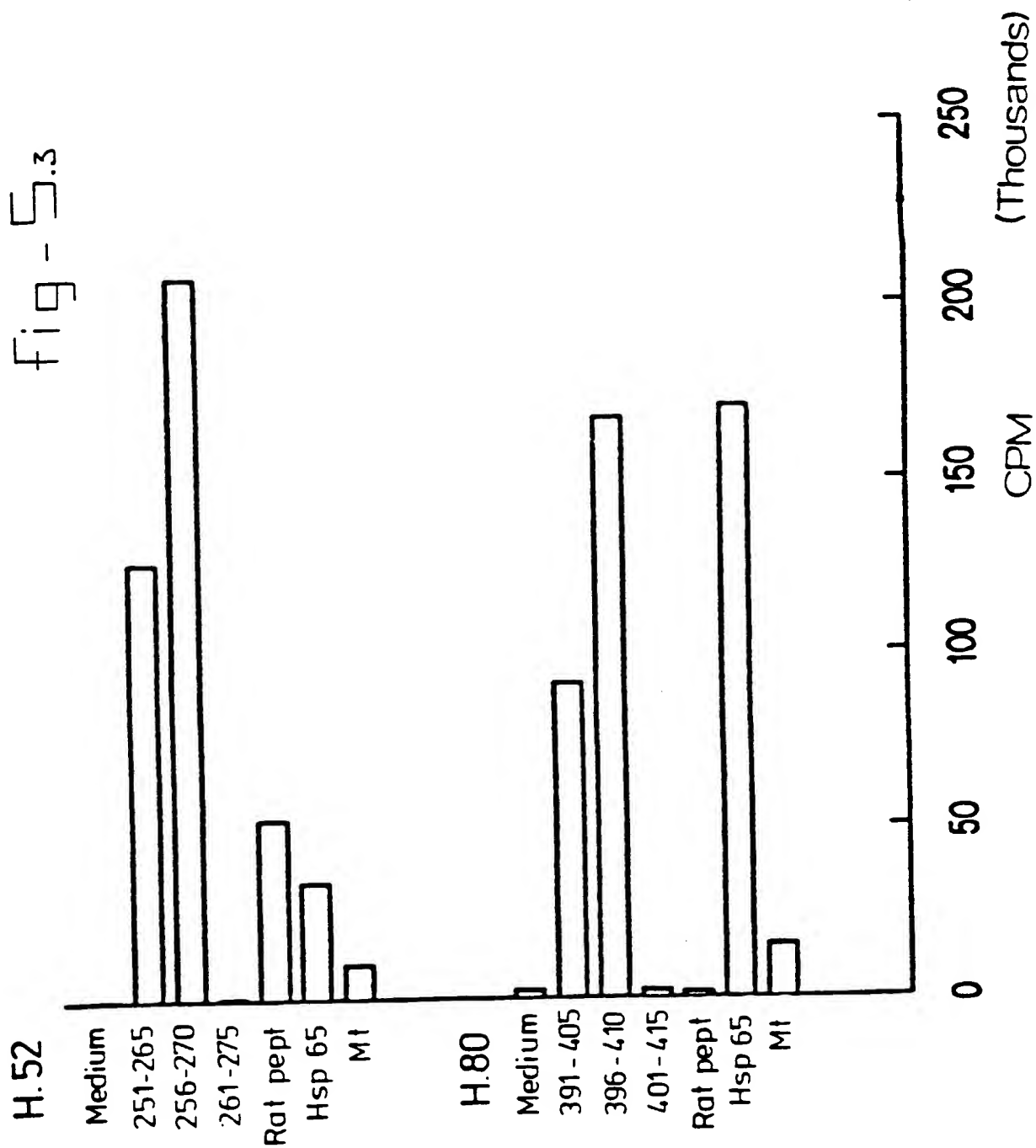
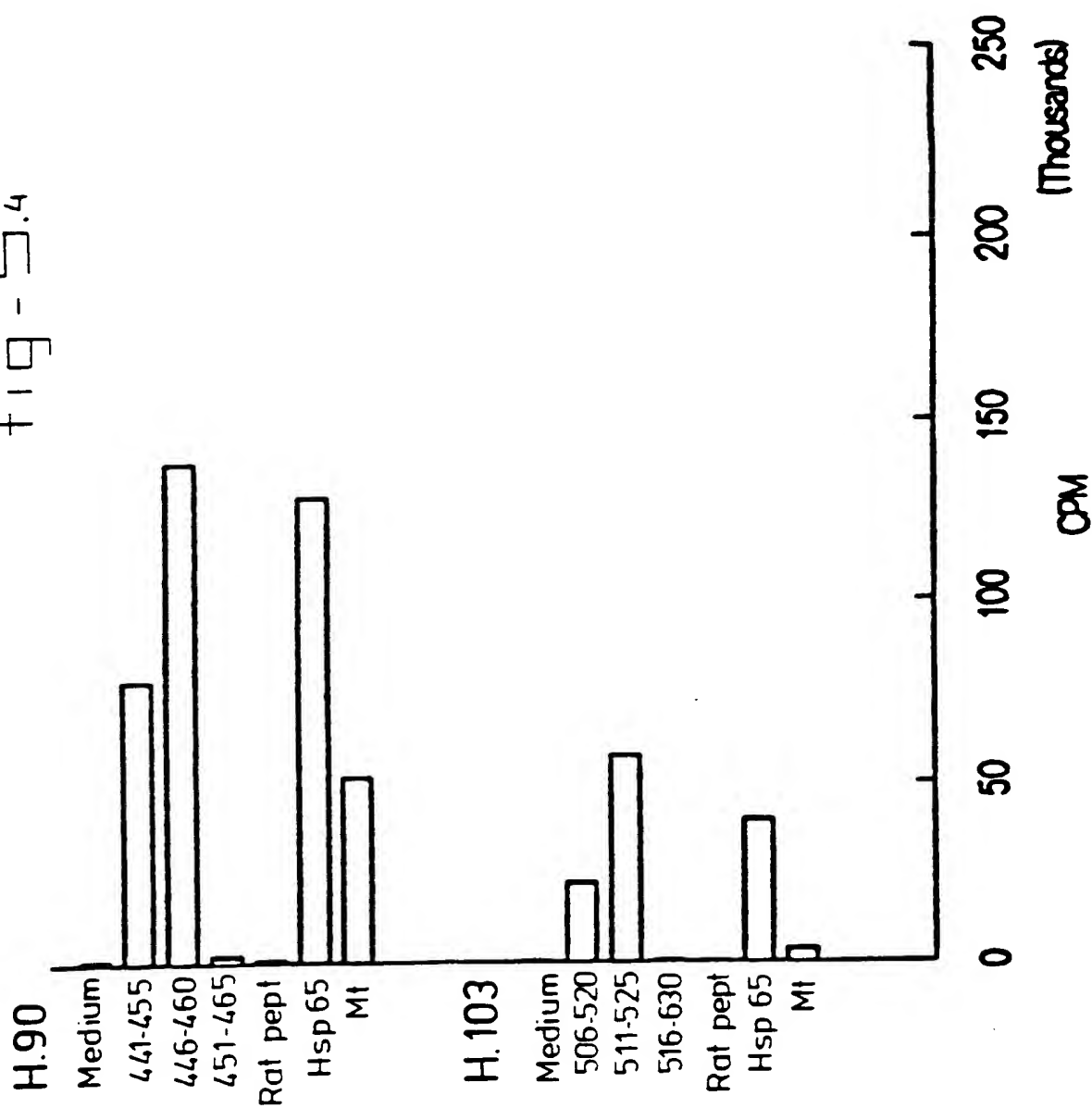


fig - 5.4



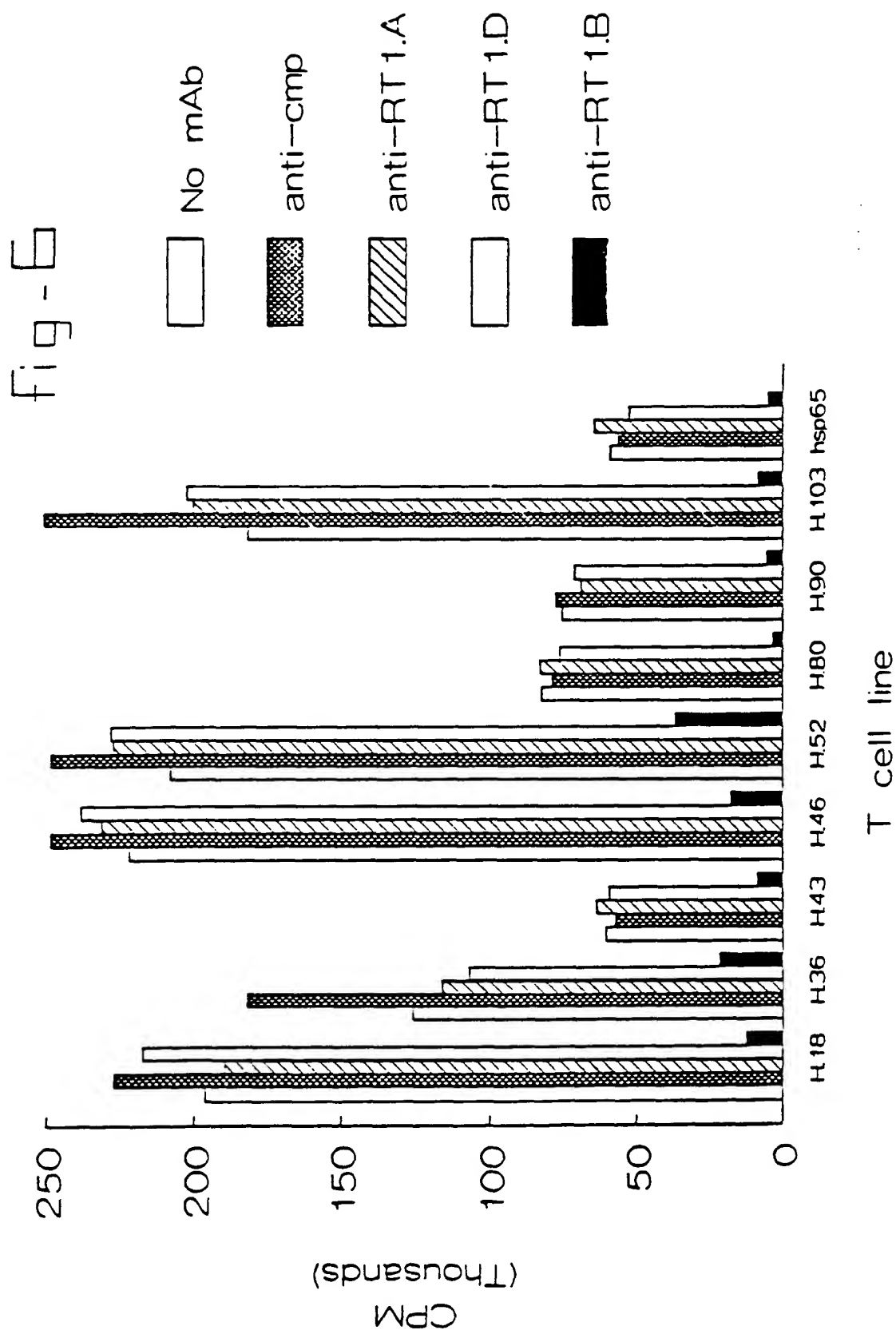


fig - 7.1 176-190

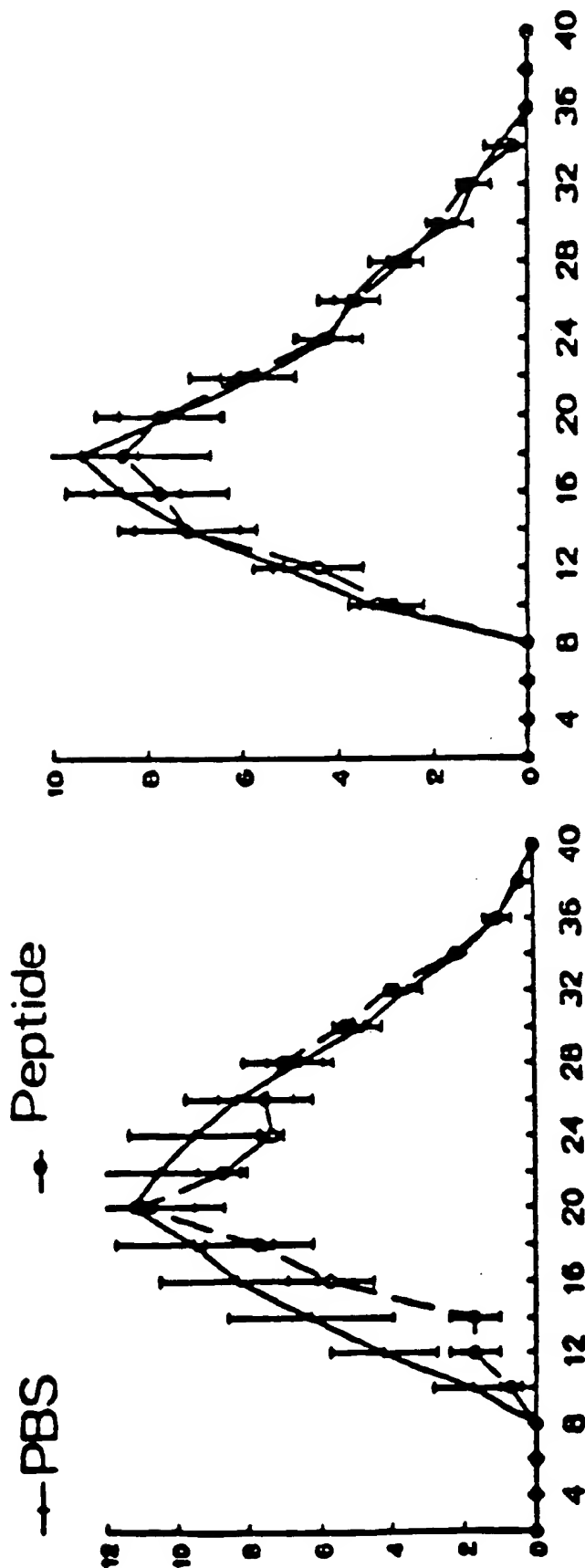


fig - 7.2
211-225 226-240

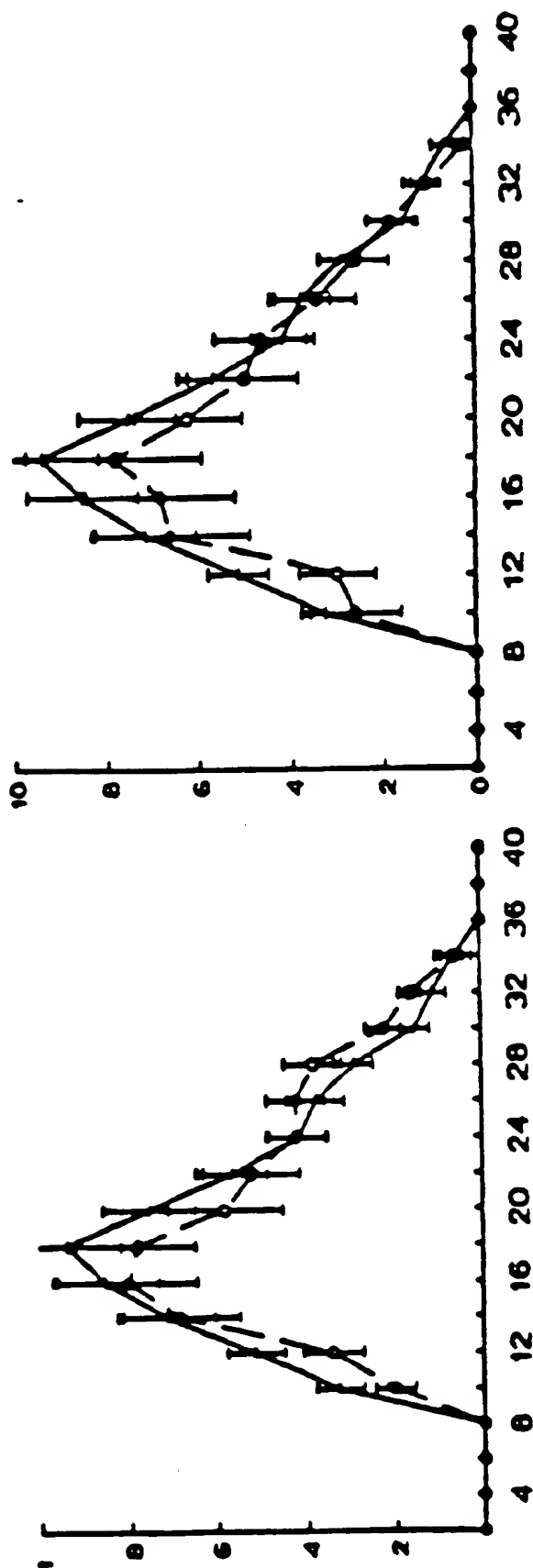
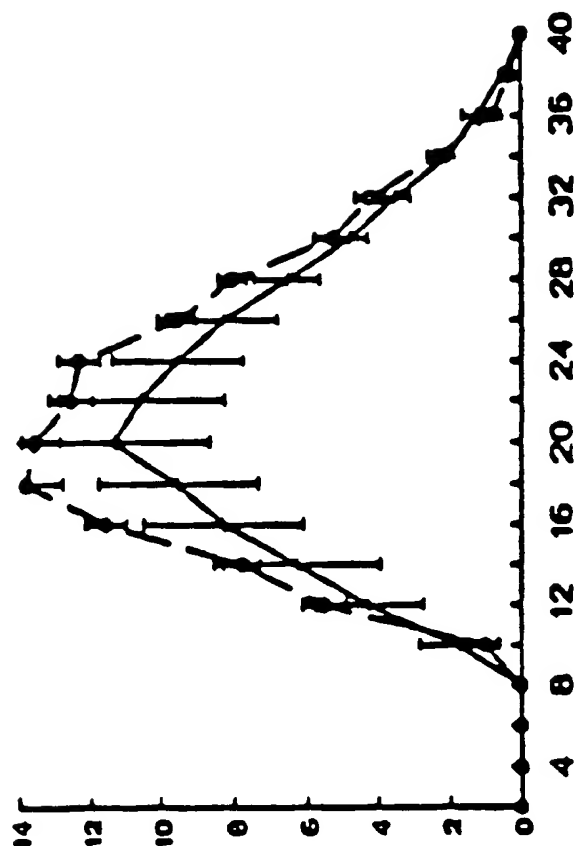


fig - 7.3

396-410



256-270

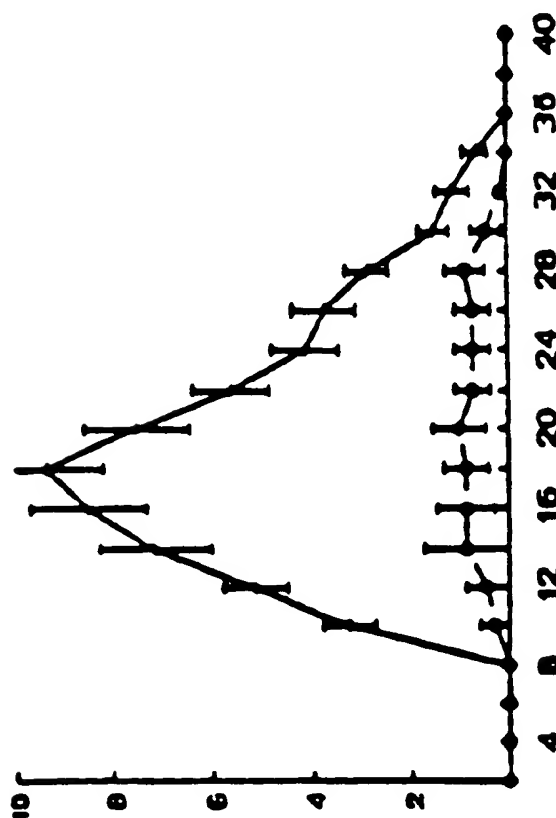
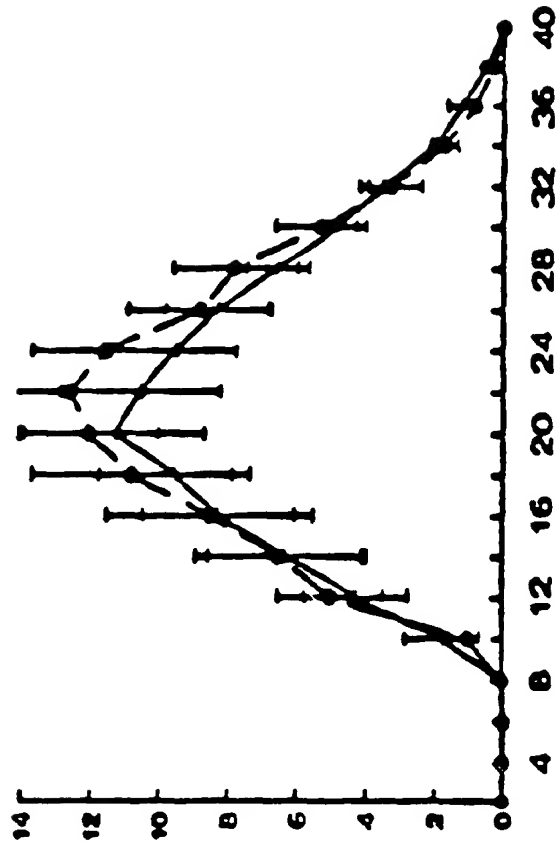
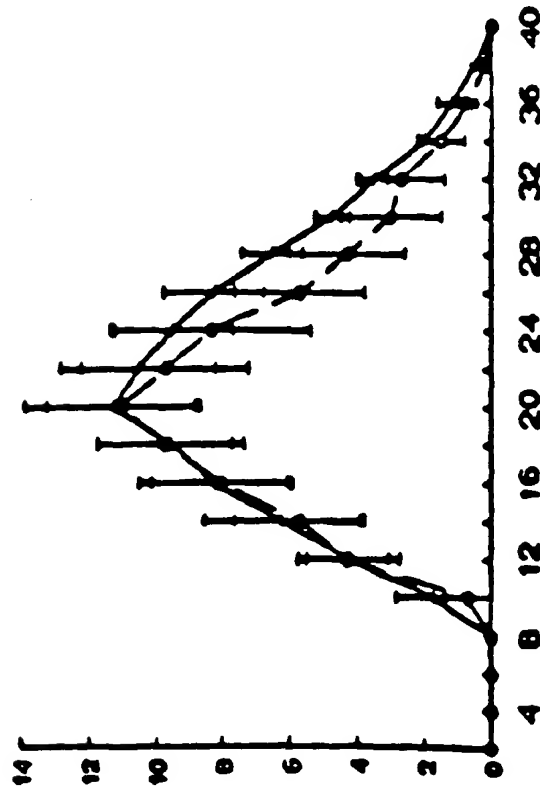


fig-7.4
511-525



446-460



1

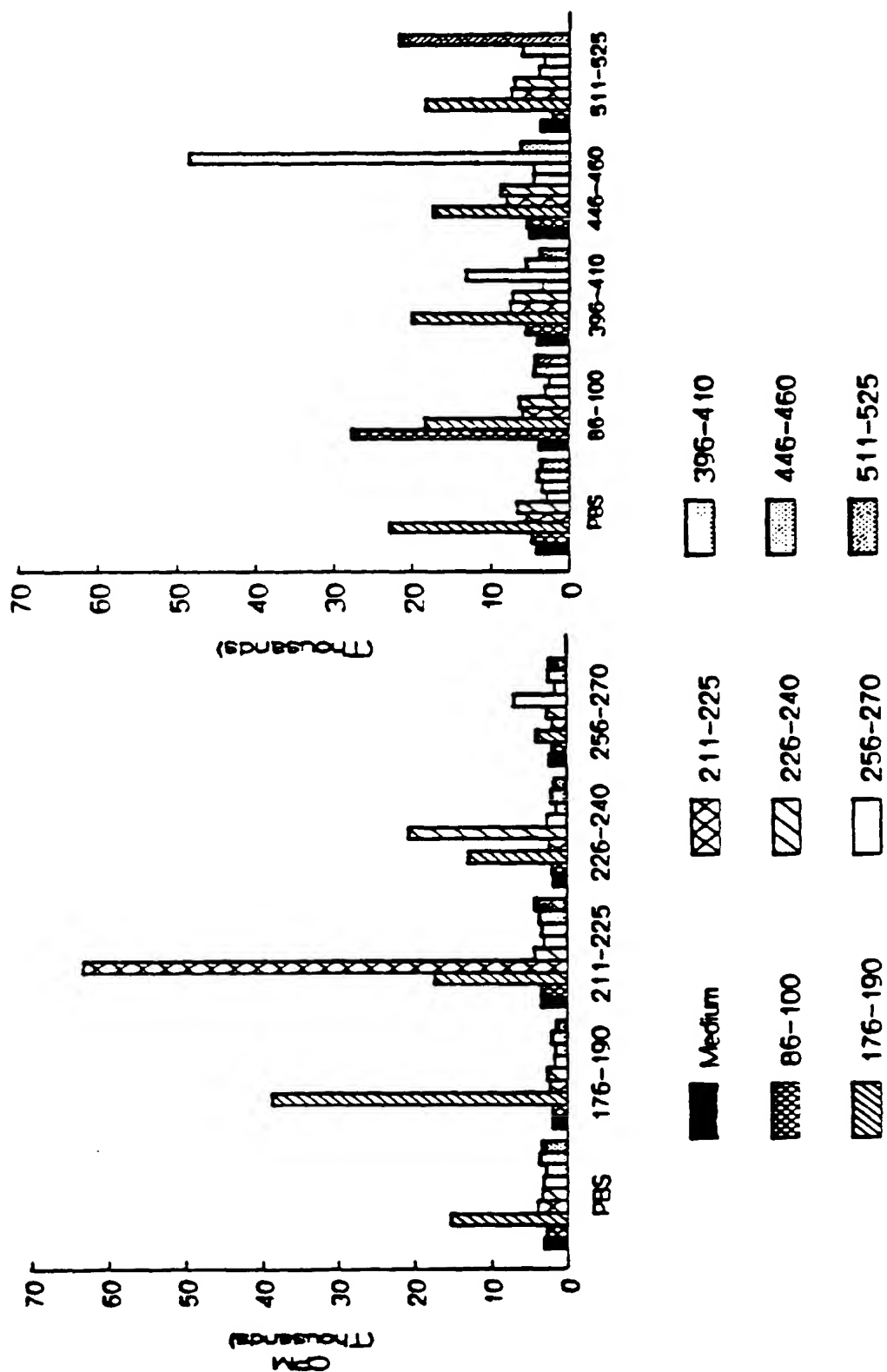


fig-9

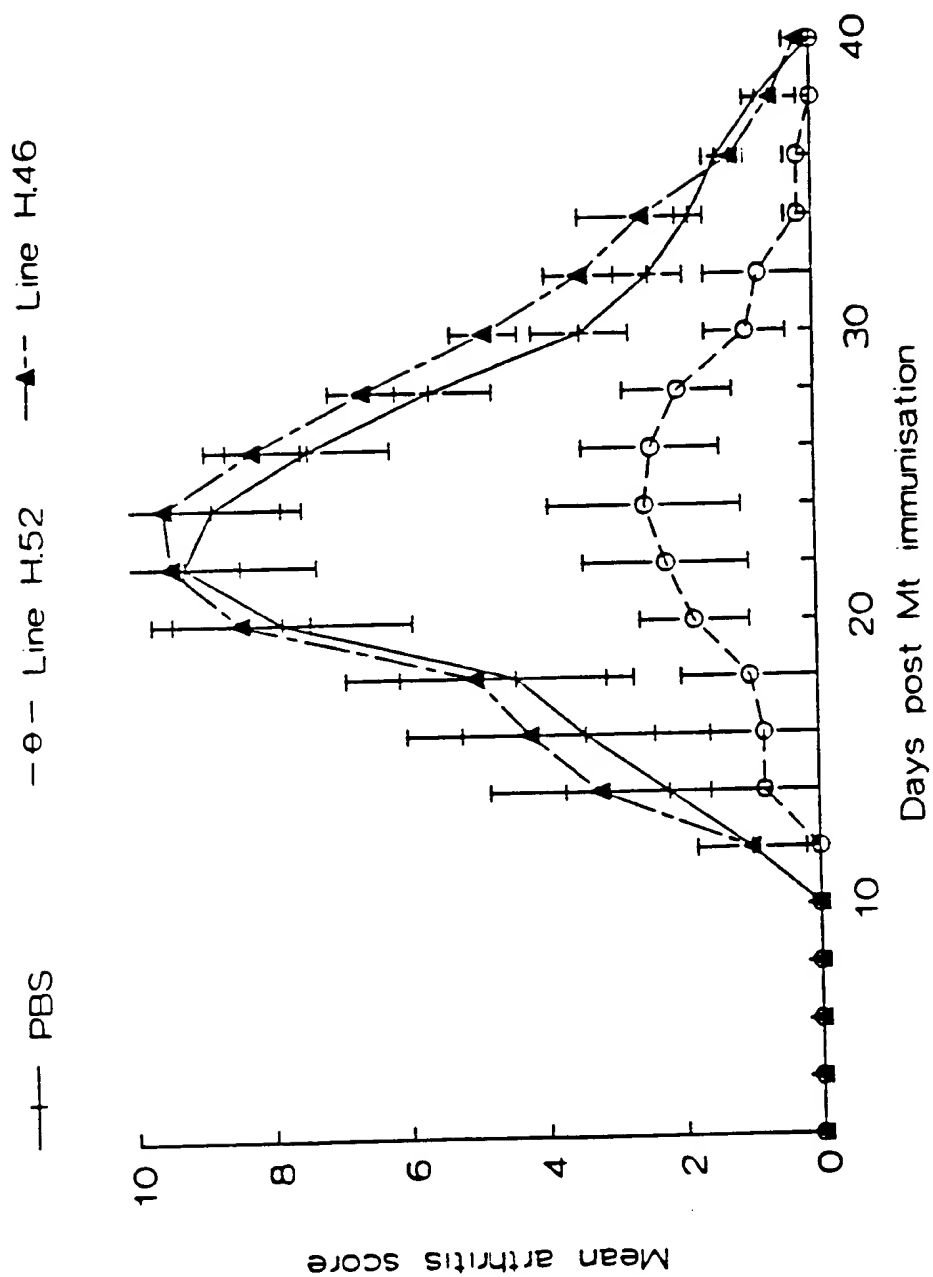


fig-10

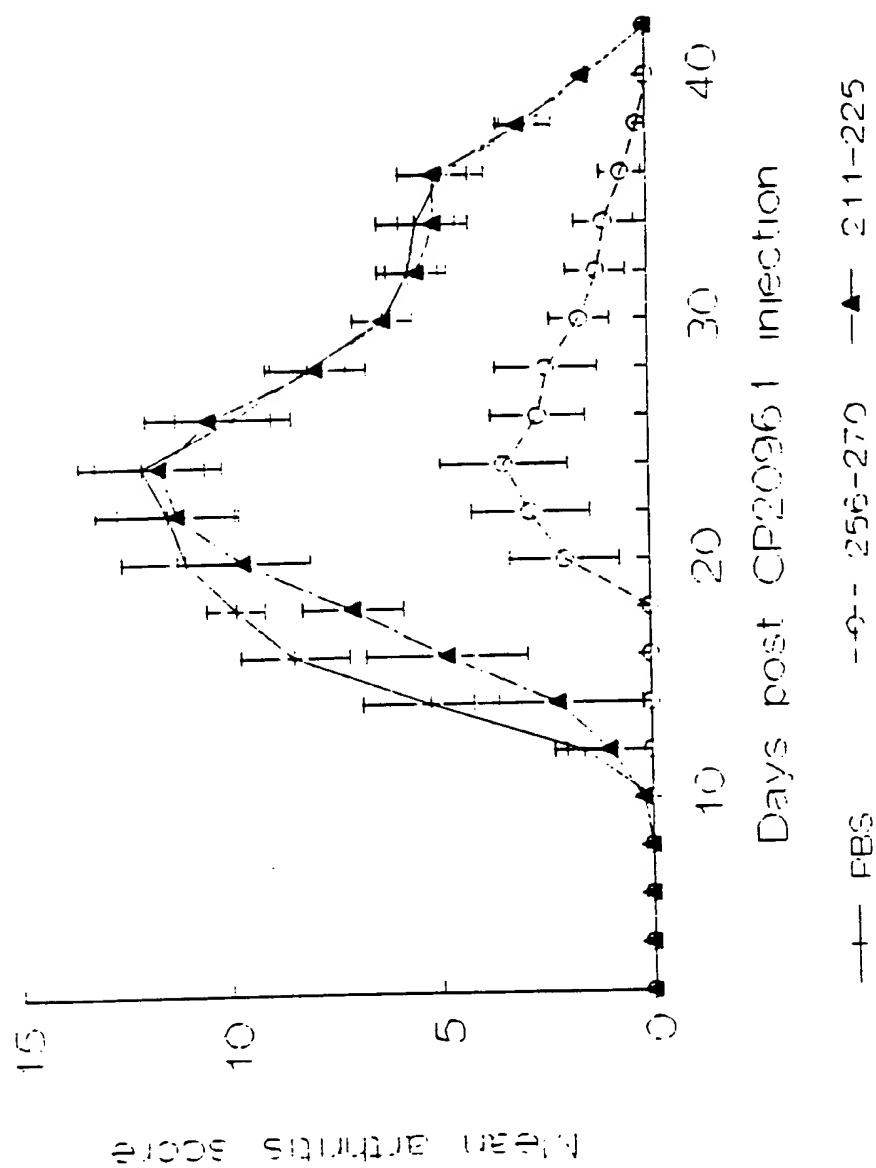


fig-11

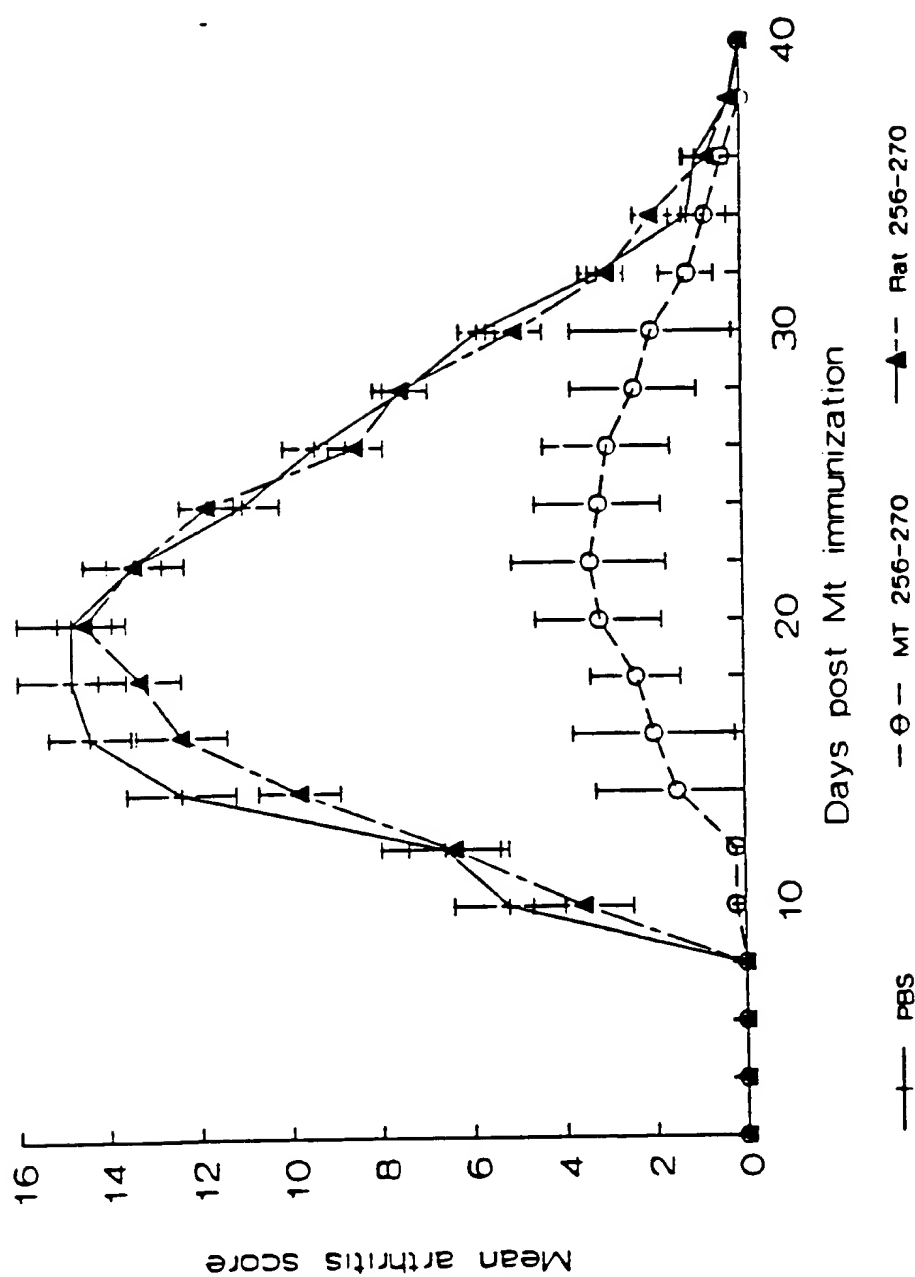


fig - 12

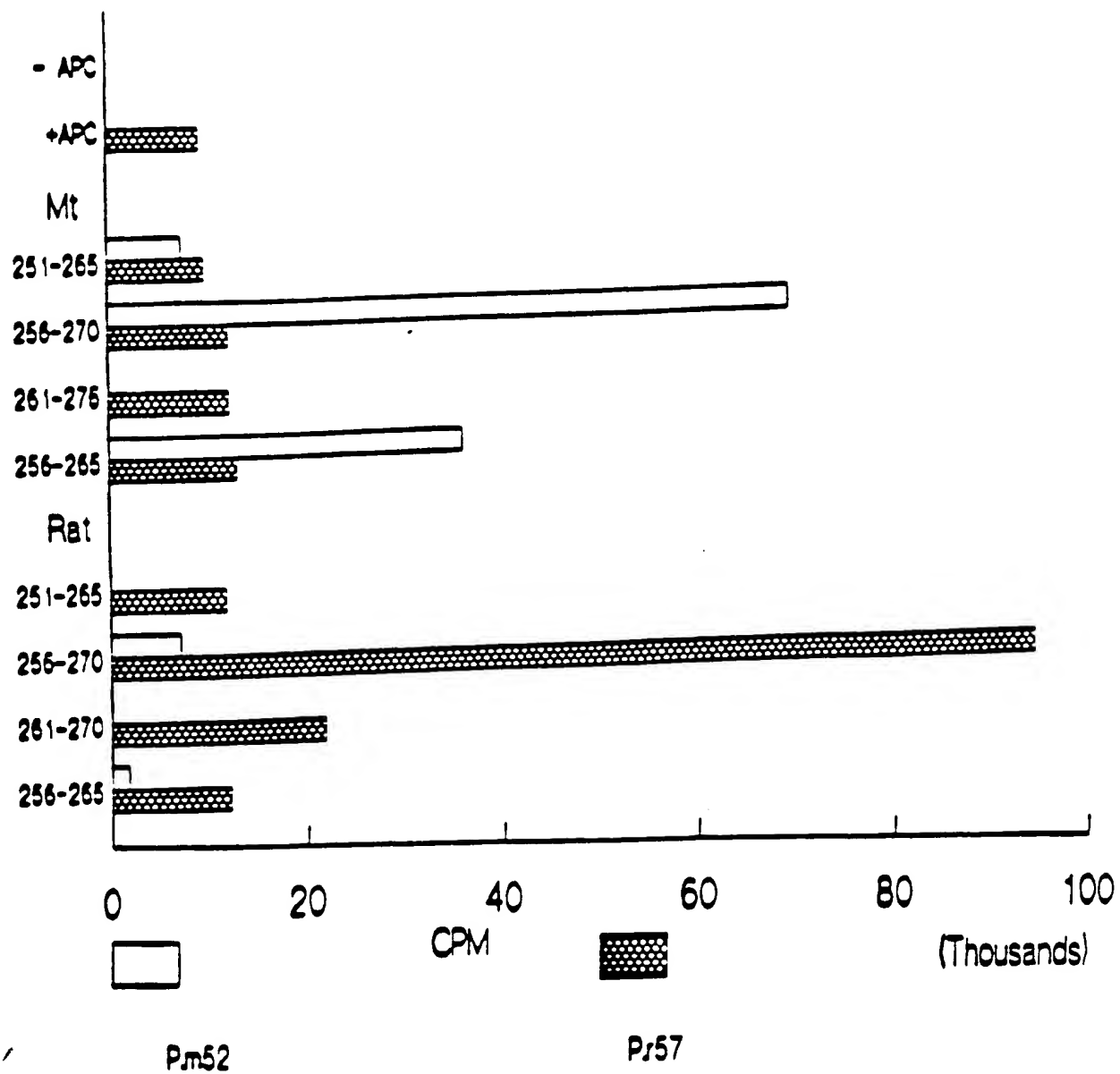


Fig. 13 (1)

 * MULTIPLE SEQUENCE ALIGNMENT HSP60 *

HUMAN	MLRLPTVFRQMRPVSRVLAPHLTRAYAKDVKF	32
RAT	-----A-----KDVKF	6
MOUSE	-----APHLTRAYAKDVKF	14
M. TUB	M-----AKTIAY	7
	*..	
HUMAN	GADARALMLQGVDLLADAVAVTMGPKGRTVII	64
RAT	GADARALMLQGVDLLADAVAVTMGPKGRTVII	38
MOUSE	GADARALMLQGVDLLADAVAVTMGPKGRTVII	46
M. TUB	DEEARGLERGLNALADAVKVTLGPKGRNVVL	39
	...* . . * . . ***** * *	
HUMAN	EQSWGSPKVTKDGVTVAKSIDLKDKYKNIGAK	96
RAT	EQSWGSPKVTKDGVTVAKSIDLKDKYKNIGAK	70
MOUSE	EQSWGSPKVTKDGVTVAKSIDLKDKYKNIGAK	78
M. TUB	EKKWGAPTITNDGVSIKEIELEDPEYKIGAE	71
	* . . * . . * . . * . . * . . * . . * . . *	
HUMAN	LVQDVANNTNEEAGDGTATVLAARSIAKEGF	128
RAT	LVQDVANNTNEEAGDGTATVLAARSIAKEGF	102
MOUSE	LVQDVANNTNEEAGDGTATVLAARSIAKEGF	110
M. TUB	LVKEVAKKTDDVAGDGTATVLAQALVREGL	103
	* . . * . . * . . ***** * *	
HUMAN	EKISKGANPVEIRRGVMLAVDAVIAELKKQSK	160
RAT	EKISKGANPVEIRRGVMLAVDAVIAELKKQSK	134
MOUSE	EKISKGANPVEIRRGVMLAVDAVIAELKKQSK	142
M. TUB	RNVAAGANPLGLKRGIEKAVEKVTETLLKGAK	135
	... ***** * . . * . . * . . *	
HUMAN	PVTTPPEEIAQVATISANGDKIGNIISDAMKK	192
RAT	PVTTPPEEIAQVATISANGDKIGNIISDAMKK	166
MOUSE	PVTTPPEEIAQVATISANGDKIGNIISDAMKK	174
M. TUB	EVETKEQIAATAAISA-GDQSIGDLIAEAMDK	166
	* . * * . . * . . * . . * . . * . . *	
HUMAN	VGRKGVITVKDGKTLNDELEIIEGMKFDRGYI	224
RAT	VGRKGVITVKDGKTLNDELEIIEGMKFDRGYI	198
MOUSE	VGRKGVITVKDGKTLNDELEIIEGMKFDRGYI	206
M. TUB	VGNEGVTVEESNTFGLQLELTEGMRFDKGYI	198
	* . . * . . * . . * . . * . . * . . *	
HUMAN	SPYFINTSKGQKCEFQDAYVLLSEKKISSIQS	256
RAT	SPYFINTSKGQKCEFQDAYVLLSEKKISSVQS	230
MOUSE	SPYFINTSKGQKCEFQDAYVLLSEKKFSSVQS	238
M. TUB	SGYFVTDPERQEAVLEDPYILLVSSKVSTVKD	230
	* * * . . * . . * . . * . . *	
HUMAN	IVPALEIANAHRKPLVIAEDVDGEALSTLVL	288
RAT	IVPALEIANAHRKPLVIAEDVDGEALSTLVL	262
MOUSE	IVPALEIANAHRKPLVIAEDVDGEALSTLVL	270
M. TUB	LLPLLEKVGAGKPLVIAEDVEGEALSTLVV	262
	..* * . . ***** * *	

Fig. 13 (2)

HUMAN	NRLKVGLQVVAVKAPGFGDNRKNQLKDMAIAT	320
RAT	NRLKVGLQVVAVKAPGFGDNRKNQLKDMAIAT	294
MOUSE	NRLKVGLQVVAVKAPGFGDNRKNQLKDMAIAT	302
M. TUB	NKIRGTFKSVAVKAPGFGDRRKAMLQDMAILT	294
	*... ..*****.***. *.***** *	
HUMAN	GGAVFGEEGLTLNLEDVQPHDLGKVGEVIVTK	352
RAT	GGAVFGEEGLNLNLEDVQAHDLGKVGEVIVTK	326
MOUSE	GGAVFGEEGLNLNLEDVQAHDLGKVGEVIVTK	334
M. TUB	GGQVISEE-VGLTLENADLSLLGKARKVVVTK	325
***.***.***	
HUMAN	DDAMLLKGKGDKAQIEKRIQEIIEQLDVTTSE	384
RAT	DDAMLLKGKGDKAHIEKRIQEIIEQLDITTSE	358
MOUSE	DDAMLLKGKGDKAHIEKRIQEIIEQLDITTSE	366
M. TUB	DETTIVEGAGDTDAIAGRVAQIRQEIENSDD	357
 ***.****.***	
HUMAN	YEKEKLNERLAKLSDGVAVLKVGGTSDVEVNE	416
RAT	YEKEKLNERLAKLSDGVAVLKVGGTSDVEVNE	390
MOUSE	YEKEKLNERLAKLSDGVAVLKVGGTSDVEVNE	398
M. TUB	YDREKLQERLAKLAGGVAVIKAGAATEVELKE	389
	*...***.*****.*****.***.***.***	
HUMAN	KKDRVTDALNATRAAVEEGIVLGGGCALLRCI	448
RAT	KKDRVTDALNATRAAVEEGIVLGGGCALLRCI	422
MOUSE	KKDRVTDALNATRAAVEEGIVLGGGCALLRCI	430
M. TUB	RKHRIEDAVRNAKAAVEEGIVAGGGVTLLOAA	421
	*...***.*****.*****.***.***	
HUMAN	PALDSLTPANEDQKIGIEIIEKRTLKIPAMTIA	480
RAT	PALDSLKPANEDQKIGIEIIEKRALKIPAMTIA	454
MOUSE	PALDSLKPANEDQKIGIEIIEKRALKIPAMTIA	462
M. TUB	PTLDELK-LEGDEATGANIVKVALEAPLKQIA	452
	*...***.****.***	
HUMAN	KNAGVEGSLIVEKIMQSSSEVGYDAMAGDFVN	512
RAT	KNAGVEGSLIVEKILQSSSEVGYDAMLGDFVN	486
MOUSE	KNAGVEGSLIVEKILQSSSEVGYDAMLGDFVN	494
M. TUB	FNSGLEPGVVAEKVRNLPAGHGLNAQTGVYED	484
*****	
HUMAN	MVEKGIIDPTKVVRTALLDAAGVASLLTTAEV	544
RAT	MVEKGIIDPTKVVRTALLDAAGVASLLTTAEA	518
MOUSE	MVEKGIIDPTKVVRTALLDAAGVASLLTTAEA	526
M. TUB	LLAAGVADPVKVTRSAALQNAASIAGLFLTTEA	516
	... *.***.***.***.***	
HUMAN	VVTEIPKEEKDPGMGAMGGMGGMGGGMGGMF	573
RAT	VVTEIPKEEKDPGMGAMGGMGGMGGGMGGMF	547
MOUSE	VVTEIPKEEKDPGMGAMGGMGGMGGGMGGMF	555
M. TUB	VVADKPEKEKASVPG-----GGDMGGMDF	540
****	

Consensus length: 573

Identity (*) : 254 (44.3%)

Similarity (.) : 211 (36.8%)

Glyceraldehyde-3-phosphate dehydrogenase sequences of
Bacillus stearothermophilus (upper sequence) and
Rattus norvegicus (Rat) (lower sequence).

+ Similar, not identical aminoacids: Bacillus / Rat (115)

				5						10				15	
Ala	Val	Lys	Val	Gly	Ile	Asn	Gly	Phe	Gly	Arg	Ile	Gly	Arg	Asn	Val
***	***	***	***	***	*	***	***	***	***	***	***	***	***	***	***
-	Val	Lys	Val	Gly	Val	Asn	Gly	Phe	Gly	Arg	Ile	Gly	Arg	Leu	Val
					5					10					15
				20					25					30	
Phe	Arg	Ala	Ala	Leu	Lys	Asn	Pro	Asp	Ile	Glu	Val	Val	Ala	Val	Asn
***	***	***	***	*	*			+	+	+	+	***	***	+	***
Thr	Arg	Ala	Ala	Phe	Ser	Cys	Asp	Lys	Val	Asp	Ile	Val	Ala	Ile	Asn
				20					25					30	
				35					40					45	
Asp	-	Leu	Thr	Asp	Ala	Asn	Thr	Leu	Ala	His	Leu	Leu	Lys	Tyr	Asp
***		+	+	***	+	***		+	+	+	+	+	+	***	***
Asp	Pro	Phe	Ile	Asp	Leu	Asn	Tyr	Met	Val	Tyr	Met	Phe	Gln	Tyr	Asp
			35					40					45		
			50					55					60		
Ser	Val	His	Gly	Arg	Leu	Asp	Ala	Glu	Val	Ser	Val	Asn	Gly	Asn	Asn
***	+	***	***	+	+	+	+	+	***	+	+	+	+	+	+
Ser	Thr	His	Gly	Lys	Phe	Asn	Gly	Thr	Val	Lys	Ala	Glu	Asn	Gly	Lys
			50				55					60			
			65				70					75			
Leu	Val	Val	Asn	Gly	Lys	Glu	Ile	Ile	Val	Lys	Ala	Glu	Arg	Asp	Pro
***	***	+	***	***	***		***	+	+		+	***	***	***	***
Leu	Val	Ile	Asn	Gly	Lys	Pro	Ile	Thr	Ile	Phe	Gln	Glu	Arg	Asp	Pro
			65			70					75				
			80				85				90				95
Glu	Asn	Leu	Ala	Trp	Gly	Glu	Ile	Gly	Val	Asp	Ile	Val	Val	Glu	Ser
	+	+		***	***	+		***	+	+		***	***	***	***
Val	Lys	Ile	Lys	Trp	Gly	Asp	Ala	Gly	Ala	Glu	Tyr	Val	Val	Glu	Ser
			80			85				90					95
				100					105					110	
Thr	Gly	Arg	Phe	Thr	Lys	Arg	Glu	Asp	Ala	Ala	Lys	His	Leu	Glu	Ala
***	***		***	***	+	+	***	+	***	+		***	***	+	+
Thr	Gly	Val	Phe	Thr	Thr	Met	Glu	Lys	Ala	Gly	Ala	His	Leu	Lys	Gly
				100					105					110	

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Fig. 14 (2)

										115							120							125								
Gly	Ala	Lys	Lys	Val	Ile	Ile	Ser	Ala	Pro	Ala	Lys	Asn	Glu	Asp	Ile																	
+++	+++	+++	+	+++	+++	+++	+++	+++	+++	+		+	+		+																	
Gly	Ala	Lys	Arg	Val	Ile	Ile	Ser	Ala	Pro	Ser	Ala	Asp	Ala	Pro	Met																	
										115							120							125								
																130							135							140		
Thr	Ile	Val	Met	Gly	Val	Asn	Gln	Asp	Lys	Tyr	Asp	Pro	Lys	Ala	His																	
	+	+++	+++	+++	+++	+++	+	+	+++	+++	+++		+	+																		
-	Phe	Val	Met	Gly	Val	Asn	His	Glu	Lys	Tyr	Asp	-	Asn	Ser	Leu																	
										130							135							140								
																145							150							155		
His	Val	Ile	Ser	Asn	Ala	Ser	Cys	Thr	Thr	Asn	Cys	Leu	Ala	Pro	Phe																	
+	+	+	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	+																	
Lys	Ile	Val	Ser	Asn	Ala	Ser	Cys	Thr	Thr	Asn	Cys	Leu	Ala	Pro	Leu																	
										145							150							155								
																160							165							170		
Ala	Lys	Val	Leu	His	Glu	Gln	Phe	Gly	Ile	Val	Arg	Gly	Met	Met	Thr																	
+++	+++	+++	+	+++	+	+	+++	+++	+++	+++	+++	+++	+	+++	+++																	
Ala	Lys	Val	Ile	His	Asp	Asn	Phe	Gly	Ile	Val	Glu	Gly	Leu	Met	Thr																	
										160							165							170								
																180							185							190		
Thr	Val	His	Ser	Tyr	Thr	Asn	Asp	Gln	Arg	Ile	Leu	Asp	Leu	Pro	His																	
+++	+++	+++	+		+++	+	+	+++	+	+	+	+++		+++	+++																	
Thr	Val	His	Ala	Ile	Thr	Ala	Thr	Gln	Lys	Thr	Val	Asp	Gly	Pro	Ser																	
										175							180							185								
																195							200							205		
Lys	Asp	Leu	Arg	Arg	-	Ala	Arg	Ala	Ala	Ala	Glu	Ser	Ile	Ile	Pro																	
	+	+++	+	+++		+	+++	+	+++	+++	+	+	+++	+++	+++																	
Gly	Lys	Leu	Trp	Arg	Asp	Gly	Arg	Gly	Ala	Ala	Gln	Asn	Ile	Ile	Pro																	
										190							195							200								
																210							215							220		
Thr	Thr	Thr	Gly	Ala	Ala	Lys	Ala	Val	Ala	Leu	Val	Leu	Pro	Glu	Leu																	
+	+	+++	+++	+++	+++	+++	+++	+++	+		+++	+	+++	+++	+++																	
Ala	Ser	Thr	Gly	Ala	Ala	Lys	Ala	Val	Gly	Lys	Val	Ile	Pro	Glu	Leu																	
										210							215							220								
																225							230							235		
Lys	Gly	Lys	Leu	Asn	Gly	Met	Ala	Met	Arg	Val	Pro	Thr	Pro	Asn	Val																	
+	+++	+++	+++	+	+++	+++	+++	+	+++	+++	+++	+++	+++	+++	+++																	
Asn	Gly	Lys	Leu	Thr	Gly	Met	Ala	Phe	Arg	Val	Pro	Thr	Pro	Asn	Val																	
										225							230							235								
																240							245							250		
Ser	Val	Val	Asp	Leu	Val	Ala	Glu	Leu	Glu	Lys	Glu	Val	Thr	Val	Glu																	
+++	+++	+++	+++	+++	+		+++	+++	+++	+++		+	+		+																	
Ser	Val	Val	Asp	Leu	Thr	Cys	Arg	Leu	Glu	Lys	Pro	Ala	Lys	Tyr	Asp																	
										240							245							250								

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Fig. 14 (3)

255					260					265				270
Glu	Val	Asn	Ala	Ala	Leu	Lys	Ala	Ala	Ala	Glu	Gly	Glu	Leu	Lys
+	+	+		+	+	+++	+	+++	+++	+++	+++		+++	+++
Asp	Ile	Lys	Lys	Val	Val	Lys	Gln	Ala	Ala	Glu	Gly	Pro	Leu	Lys
255						260				265				

				275					280					285
Ile	Leu	Ala	Tyr	Ser	Glu	Glu	Pro	Leu	Val	Ser	Arg	Asp	Tyr	Asn
+++	+++	+	+++	+	+++	+	+	+	+++	+++		+++	+	+++
Ile	Leu	Gly	Tyr	Thr	Glu	Asp	Gln	Val	Val	Ser	Cys	Asp	Phe	Asn
270					275					280				285

			290					295					300
Ser	Thr	Val	Ser	Ser	Thr	Ile	Asp	Ala	Leu	Ser	Thr	Met	Val
+	+		+++	+++	+++	+	+++	+++		+	+	+	+
Asn	Ser	His	Ser	Ser	Thr	Phe	Asp	Ala	Gly	Ala	Gly	Ile	Ala
					290				295				300

		305					310					315
Gly	Lys	Met	Val	Lys	Val	Val	Ser	Trp	Tyr	Asp	Asn	Glu
+	+	+	+++	+++	+	+	+++	+++	+++	+++	+++	+++
Asp	Asn	Ile	Val	Lys	Leu	Ile	Ser	Trp	Tyr	Asp	Asn	Glu
			305				310					315

	320					325				330
Ser	His	Arg	Val	Val	Asp	Leu	Ala	Ala	Tyr	Ile
+++	+	+++	+++	+++	+++	+++	+++	+++	+	+++
Ser	Asn	Arg	Val	Val	Asp	Leu	Met	Ala	Tyr	Met
			320				325			330